CLAIMS

We claim:

1. A method of screening for candidate agents capable of modulating germline transcription, comprising:

a) adding a library of candidate agents to a plurality of cells;

b) preparing mRNA from said plurality of cells to form an mRNA mixture;

c) adding to said mixture at least a first RNAse protection probe (RPP) substantially complementary to a first germline mRNA to form a first hybridization complex between said first germline mRNA and said first RPP;

d) adding an RNAse protection enzyme (RPE) to said mixture, such that mRNA that is not protected is digested;

e) quantifying the amount of said first germline mRNA as compared to a cell in the absence of a candidate agent; and

f) identifying at least one candidate agent that alters the amount of said first germline mRNA.

2. A method according to claim 1, further comprising stimulating said cells to produce germline mRNA.

3. A method according to claim 1, wherein said RPP is labeled.

4. A method according to claim 3, wherein said label is a fluorescent label.

5. A method according to claim 3, wherein said label is a radioisotope.

6. A method according to claim 1, wherein said germline mRNA is Ig alpha-1.

7. A method according to claim 1, wherein said germline mRNA is Ig alpha-2.

8. A method according to claim 1, wherein said germline mRNA is Ig epislon.

9. A method according to claim 1, wherein said germline mRNA is Ig gamma-1.

10. A method according to claim 1, wherein said germline mRNA is Ig gamma-2.

11. A method according to claim 1, wherein said germline mRNA is Ig gamma-3.

12. A method according to claim 1, wherein said germline mRNA is Ig gamma-4.

13. A method according to claim 1, wherein said RPP has a sequence selected from the group consisting of the sequences depicted in Figure 3.

14. A method according to claim 1, wherein said RPP has a sequence selected from the group consisting of the sequences depicted in Figure 4.

15. A method according to claim 1, wherein said library comprises at least 10^3 candidate agents.

16. A method according to claim 1, wherein said library comprises at least 10^5 candidate agents.

17. A method according to claim 1, further comprising:

a) adding to said mixture at least a second RNAse protection probe (RPP) substantially complementary to a second germline mRNA to form a second hybridization complex between said second germline mRNA and said second RPP;

b) quantifying the amount of said second germline mRNA as compared to a cell in the absence of a candidate agent; and

c) identifying at least one candidate agent that alters the amount of said first germline mRNA but not said second germline mRNA.

18. A method according to claim 1, wherein said library comprises small molecules.

19. A method according to claim 1, wherein said library comprises peptides.

20. A method according to claim 19, wherein said peptides are random peptides.

21. A method according to claim 19, wherein said peptides are partially random peptides.

22. A method according to claim 19, wherein said adding is done using retroviruses encoding said peptides.

23. A method according to claim 19 wherein said adding is done using retroviruses comprising sequences derived from a cDNA library.

24. A method of quantifying the amount of a plurality of germline constructs comprising:

a) preparing mRNA from said plurality of cells to form an mRNA mixture;

c) adding at least three RNAse protection probes (RPPs) selected from the group consisting of the sequences depicted in Figures 3 and 4;

d) adding an RNAse protection enzyme (RPE) to said mixture, such that mRNA that is not protected is digested;

e) quantifying the amount of said germline mRNA.

25. A kit for quantifying the amount of germline mRNA in a sample, comprising

a) at least one RNAse protection probe (RPP) comprising a nucleic acid sequence selected from the group consisting of the nucleic acid sequences of the Igα1, Igα2, Ig-epsilon, Ig gamma-1, Ig gamma-2, Ig gamma-3 and Ig gamma-4 RPPs set forth in Figures 3 and 4; and

b) an RNAse protection enzyme (RPE);

and optionally comprising at least one RNAse protection probe (RPP) which is substantially complementary to a transcript of a housekeeping gene.

26. A kit according to Claim 25, wherein all RNAse protection probes are labeled.